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| **1.0 Principle:** |  |

The Hematek slide stainer is a fully automated, bench-top instrument designed specifically for use in hematology. It is a self-contained system that automatically stains blood smears prepared on standard glass slides.

System Parts



1. Lid
2. Thumb screw
3. Middle cover
4. Red waste tank
5. Conveyor spirals
6. Platen
7. Leveling feet
8. Sensing switch fingers
9. Slide drawer
10. Waste tan
11. Pump assemblies
12. Power switch

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| Hematek Stain PakHematek Cannula    **2.****0 Specimen:** |  |

The instrument requires a carefully prepared blood smear. Smears prepared from nasal, sputum, sinus, bronchial secretions, feces and urine can also be stained with this method.

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| **3.****0 Materials:** |  |

* Hematek slide stainer
* Frosted end glass microscope slides
* Hematek Stain Pak (Modified Wright’s stain)
* Hematek Cannula
* Hematek 3000 System Instruction Manual

1. **Procedure**
   1. Turning the instrument ON:
      1. Press the power switch located on the top right side of the instrument to the on position. The green power light comes on, the fan starts, and the conveyor spirals slowly revolve.
   2. Prime the Tubing
      1. Press the priming button. The green light in the priming button goes on and the pumps start rotating. Continue until the stain, buffer and rinse all flow evenly through their respective tubes to the platen without any air bubbles.
   3. In the pump tubing does not prime easily, pinch the tubes serval times with your fingers in the area between the cannula and the pump.
   4. To sop priming press the priming button. The green light in the priming button goes off and the pumps stop rotating.
   5. After priming, wipe the platen with a soft lint-free absorbent cloth or tissue. Wipe from right to left only.
2. **Load Slides**.
   1. The slides must be inserted into the spiral grooves so they are parallel to the slide loading lines inscribed on the platen.
      1. **If the slides are not placed correctly in the spiral grooves, breakage may occur.**
   2. Load four priming slides into the grooves of the conveyor spirals with the marked side facing in the opposite direction of the conveyance. Check to make sure the gap between the priming slides and the platen is properly filled with stain, buffer, and rinse during the staining of the priming slides.
      1. **If priming slides are not satisfactorily stained – see section 8.5 of Hematek System Operator’s manual or technical supervisor for assistance.**
   3. Load the smeared glass slides into the into the groove of the conveyor spirals with the smeared edge facing in the direction of the conveyance and the feathered edge of the smear toward the rear of the system.
      1. **Clean the platen after daily use or if no glass slides are to be processed for 1 hour or more.**
3. **Stain the Smears.**
   1. The slides will automatically along the platen
   2. When the slide contacts the first sensing switch and the pump is activated, stain flows from the stain orifice, filling the capillary space between the platen and the slide. This is followed by metered volumes of buffer and rinse solutions as the slide moves through the next two sensing switches.
   3. After rinsing, the slide is dried and delivered into the slide drawer, ready for examination.
4. **Results**

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| **Cell Types** | **Nucleus** | **Cytoplasm** | **Granules** |
| Erythrocytes | N/A | Pink | N/A |
| Platelets | N/A | Violet Purple | Dark Lilac |
| Leukocytes  Granular  Polymorphonuclear  Neutrophils | Purple | Purplish-Grey | Lilac-Violet Pink |
| Eosinophils | Dark Blue | Purplish-Grey | Red to Red-Orange |
| Basophils | Dark Blue | N/A | Dark Purple |
| Bands | Purple | Purplish-Grey | Violet |
| Monocytes  Non-Granular | Violet | Blue-Grey | N/A |
| Lymphocytes | Dark Blue | Blue-Grey | N/A |

\*\*Note: Background/area between cells should be clear and free of debris\*\*

1. **Turning the Instrument OFF**
   1. Clean the pump tubings
   2. Clean the waste tank
   3. Clean the platen
   4. Turn the pump release tubing release knob to the unlock position.
   5. Press the power switch. The green light goes off, the fan and the conveyor spirals stop.
2. **Stain Pak Replacement**
   1. Remove the three cannulas from the used stain pak and lift the empty carton out of the well at the rear of the instrument.
   2. Remove the perforated tabs from the new Hematek stain pak carton
   3. Inset a new Hematek stain Pak carton into the well, with the stain bottle to the right. Make sure the carton is all the way down and resting on the tray at the bottom of the well. The carton should be level when properly installed.
   4. Check the cannulas and replace if needed (bent or damaged)
   5. Insert the appropriate cannula into its respective bottle by puncturing the center of the indentation in the visible corner of the bottle.
   6. You can remove the cannula and reinsert it to make a second hole or turn it in order to make a slightly larger hole for venting.
   7. With the cannula , make a second hole in the top of the bottle, near the indentation.
   8. Push the cannula down through the first puncture until the guard at the top touches the plastic container.
   9. Repeat steps 8.1-8.8 for each bottle.
   10. Prime the tubing.
   11. Close the lid
   12. Empty the waste tank into a sink and flush the sink drain with copious amounts of tap water. Rinse the waste tank with water.
   13. Prime the instrument to remove any air bubbles that may have developed in the tubing during the changeover.
3. **Maintenance**

Periodic maintenance must be performed and documented on Form H006/2017 logsheet. Information in ( ) refers to section in the Hematek 3000 instruction manual where specific directions are located for performing each task.

All maintenance activities are routinely reviewed by supervisor or designee.

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| Daily | As Needed | Weekly |
| Clean stain tube and cannula (chapter 6.3) | Clean exterior surfaces (chapter 6.2) | Clean drain troughs and rear guard rail (chapter 6.6) |
| Clean platen (chapter 6.4) |
| Clean waste tank  (chapter 6.5) |

1. **Troubleshooting** 
   1. See section Hematek 3000 System instruction manual located in the Hematology

work area when irregular or unusual operational issues arise.

**10.1.1 - Use Form H022C.2017 for documenting corrective action if needed.**

* 1. In the event of instrument failure perform manual diff staining procedure.

1. **Reference(s):**

* <http://www.austincc.edu/mlt/hem/Hem_ACC_Hematek%20Stainer%20Procedure_12.doc>
* Hematek® 3000 System Instruction Manual, version 1.2,Siemens Healthcare Diagnostic products, 2013
* Midas III Slide Stainer procedure, Marina del Rey Hospital, 2011

Procedure Prepared by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Procedure Approved by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_